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10/077,427

02/15/2002

Sam M. Jyawook

67,064-001

3582

26096

7590

03/20/2003

CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1771

4

DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 10/077,427 | Applicant(s) JYAWOOK ET AL. | |
| | Examiner Hai Vo | Art Unit 1771 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-7, 15-20, drawn to a weather stripping, classified in class 428, subclass 304.4+.
 - II. Claims 8-14, drawn to a method of making a weather stripping, classified in class 264, subclass various.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process such as one that uses air as a blowing agent instead of a supercritical fluid to form a microcellular structure. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
3. During a telephone conversation with David J. Gaskey on 03/06/2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7, and 15-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-14 are withdrawn from further

consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

4. Claim 2 is objected to because of the following informalities: "TPV" needs to be spelled out as thermoplastic vulcanizate. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 7, 15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Steffen (US 5,932,312). Steffen teaches a sealing profile comprising a sealing pad 12, a sealing lip 13 and a base 10 shown in figure 2. The sealing pad is made of a closed-cell, microcellular rubber (column 4, lines 44-46) whereas the sealing lip and the base are formed from a traditional elastic material such as an elastomeric or thermoplastic material (column 1, line 14, column 4, lines 49-50). Figures 2 and 3 show that at least one of the base portion or the sealing pad has a cross sectional dimension that selectively varies along a length of the weather stripping. Steffen is silent as to process of making a microcellular structure of the sealing pad. However, it is the examiner's position that the sealing profile of Steffen is identical to the claimed article prepared by the method of the claim, because both articles are made of the same materials,

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having structural similarity (microcellular sealing pad and elastic base). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or an obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289,291 (Fed. Cir. 1983). The Steffen reference anticipates the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted Declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with Steffen. It is the examiner's position that Steffen anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffen (US 5,932,312) as applied to claim 1, in view of Gopalan et al (US 6,514,604). Steffen does not specially disclose the thermoplastic material comprising thermoplastic vulcanizate (TPV) (column 5, lines 1-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ thermoplastic vulcanizate as the base and sealing pad because it is a common material used in weather strippings and commercially produced under UNIPRENE trade name.
9. Claims 4-6, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffen (US 5,932,312) as applied to claim 1, in view of Cha et al (US 5,158,986). Steffen is silent as to the cell size and cell density of the microcellular structure. Cha teaches a microcellular material having a cell size between 0.1 to 1 micron and cell density between 10^{12} to 10^{15} cells /cm³ (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the microcellular rubber having the cell size and cell density as taught by Cha motivated by the desire to improve mechanical strength and toughness of the foam material while less polymeric material is used and the costs thereof are reduced.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-

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4426. The examiner can normally be reached on Tue-Fri, 8:30-6:00 and on alternating Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV
March 13, 2003



TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

CLAIMS

We claim:

1. A weather stripping for use in sealing an interface between selected portions of a vehicle, comprising:
 - a body portion that is adapted to be supported on a selected one of the vehicle portions; and
 - a sealing portion extending at least partially away from the body portion, the sealing portion and the body portion comprising a thermoplastic material with at least the sealing portion having a microcellular structure .
2. The weather stripping of claim 1, wherein the thermoplastic material comprises TPV.
3. The weather stripping of claim 2, wherein at least the thermoplastic material of the sealing portion is foamed.
4. The weather stripping of claim 1, wherein the microcellular structure includes cells having a size less than about 2 microns.
5. The weather stripping of claim 4, wherein the microcellular structure includes cells having a size between about .1 micron and about 1.0 micron.
6. The weather stripping of claim 1, wherein the thermoplastic material has a microcellular structure with a cell density in the range from about 10^9 to about 10^{15} per cubic centimeter.
7. The weather stripping of claim 1, wherein at least one of the body portion or the sealing portion has a cross sectional dimension that selectively varies along a length of the weather stripping.

8. A method of making weather stripping for use in sealing an interface between selected portions of a vehicle, comprising the steps of:
- melting a thermoplastic material;
 - introducing a supercritical fluid into the melted thermoplastic material;
 - forming a microcellular structure in the thermoplastic material using the supercritical fluid; and
 - forming the weather stripping from the thermoplastic material having the microcellular structure.
9. The method of claim 8, wherein the weather stripping has a sealing portion that has a cross section and including varying the cross section along selected portions of the length of the sealing portion.
10. The method of claim 8, wherein the thermoplastic material comprises TPV.
11. The method of claim 8, including forming the microcellular structure such that the thermoplastic material is a close cell foam.
12. The method of claim 8, including forming the microcellular structure such that the cells have a size less than about 2 microns.
13. The method of claim 12, including forming the microcellular structure such that the cells have a size between about .1 micron and about 1.0 micron.
14. The method of claim 8, including forming the microcellular structure such that the material has a cell density in the range from about 10^9 to about 10^{15} per cubic centimeter.

15. A weather stripping for use in sealing an interface between selected portions of a vehicle, the weather stripping having a body portion that is adapted to be supported on a selected one of the vehicle portions and a sealing portion extending at least partially away from the body portion, made by the process comprising the steps of:

melting a thermoplastic material;

introducing a supercritical fluid into the melted thermoplastic material;

forming a microcellular structure in the thermoplastic material using the supercritical fluid; and

forming the weather stripping from the thermoplastic material having the microcellular structure.

16. The weather stripping of claim 15, wherein the thermoplastic material comprises TPV.

17. The weather stripping of claim 15, wherein the microcellular structure includes cells having a size less than about 2 microns.

18. The weather stripping of claim 17, wherein the microcellular structure includes cells having a size between about .1 micron and about 1.0 micron.

19. The weather stripping of claim 15, wherein the thermoplastic material has a cell density in the range from about 10^9 to about 10^{15} per cubic centimeter.

20. The weather stripping of claim 15, wherein at least one of the body portion or the sealing portion has a cross sectional dimension that selectively varies along a length of the weather stripping.

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